DOE/ID-11110
Revision D

Risk-Based End State Vision for the Idaho National Engineering and Environmental Laboratory Site (Draft)

January 2004

Prepared for the
U.S. Department of Energy
Idaho Operations Office

EXECUTIVE SUMMARY

Over the past 50 years, the Idaho National Engineering and Environmental Laboratory (INEEL) has played a key role supporting defense and nuclear energy programs for the United States. Past practices at the INEEL and other U. S. Department of Energy (DOE) facilities have resulted in a legacy of waste generation and contaminants released to the environment. The DOE Environmental Management (EM) Program has been tasked with the complex challenge of cleaning up environmental releases, disposing of legacy waste, and closing no longer needed facilities (reducing the footprint) in a timely and cost-effective manner.

In an effort to accelerate legacy cleanup, the Secretary of Energy directed that a review of the EM Program be conducted with the goal of quickly and markedly improving program performance. In February 2002, DOE published the *Top-to-Bottom Review for the Environmental Management Program* (DOE 2002a). The report concluded that the department's cleanup efforts across the United States need to be refocused on reducing or eliminating environmental risk as quickly as possible without compromising protection of the public. This review also found that cleanup of sites is often further complicated by a lack of realistic future land-use assumptions and by overly conservative scenarios that assume contaminated areas will be subject to farming, drilling of drinking water wells, or residential use (DOE 2002a, p. V-10).

To address this particular impediment to cleanup progress, DOE issued a policy on "Use of Risk-Based End States" (DOE P 455.1, 2003). The policy was issued in July 2003 and is based on the premise that effectiveness of cleanup programs can be improved by focusing efforts on cleanup that is aimed at, and achieves, clearly defined risk-based end states. Risk-based end states are representations of site conditions that are based on the planned future land use of the property and are protective of human health and the environment consistent with that use.

The policy requires that each DOE site undergoing cleanup prepare a risk-based end state vision (RBESV) document that describes anticipated conditions at the site at the end of the EM cleanup mission. The RBESV is not a decisional document but rather serves as a means to communicate that vision and initiate dialog with stakeholders, regulatory agencies, and the public.

Long after EM cleanup is completed, the INEEL Site is expected to have a long-term future mission in nuclear energy research and development. In July 2002, Secretary of Energy Spencer Abraham announced a major mission realignment for the lab, establishing the Site as the nation's lead laboratory for nuclear energy, research, and development. Management of the laboratory was reassigned to the Nuclear Energy, Science, and Technology Office of DOE.

Acreage within the INEEL is classified as industrial and mixed use by the U.S. Department of the Interior Bureau of Land Management (DOE-ID 2002b, p. 30). Most of the work at the INEEL is performed within the Site's discrete primary facility areas. The great majority of the Site is undeveloped. The RBESV is based on the fact that the INEEL Site, as it currently exists, will remain intact for the foreseeable future. Restricted access to INEEL land provides protection of important ecological and cultural resources. No change to the present INEEL boundaries or ownership is anticipated, and most of the developed areas of the Site will remain industrial use for the foreseeable future. Likewise, the undeveloped areas will continue to be used as a buffer area around the Site's developed facility areas and will be available for use for ecological and cultural preservation, environmental research, and controlled grazing and hunting.

Most of the previous Comprehensive Environmental Response, Compensation, and Liability Act risk-based cleanup decisions for the INEEL have been based on a scenario of 100 years of federal institutional control followed by possible residential use. A more realistic vision for the INEEL Site is continued federal control with restricted access mixed land use very similar to the way the land is currently used. Future risk assessments and remedial action decisions will be based on more realistic future land-use scenarios that do not include residential use, unless cleanup to such levels proves to be appropriate.

Once the RBESV is developed, DOE Policy 455.1 (2003) requires that sites evaluate existing cleanup activities and strategies to determine if they are consistent with the end state vision. Some potential variances between the risk-based end states depicted in this document and current cleanup plans and requirements have been identified in Section 5 of this document. At this time, no decisions have been made regarding the variances; they are simply cleanup activities that the DOE believes merit further evaluation to determine if they are necessary and a wise expenditure of taxpayer dollars. Cost-benefit analyses and risk assessments will be needed to evaluate whether the variances are worth pursuing and to ensure that the proposed alternatives are protective of human health and the environment.

If the DOE determines that it is appropriate to propose changes to current cleanup plans and agreements, such changes would have to be approved through the appropriate legal and regulatory channels with input from stakeholders. DOE is committed to full compliance with all applicable regulatory and legal requirements.